Section 206
Flood Plain Management Services

Flood Plain Information

White River, Hancock Branch, and Alder Meadow Brook
Hancock and Granville, Vermont

May 1989

US Army Corps of Engineers
New England Division

TABLE OF CONTENTS

FIGURES

TABLES

EXHIBITS

PLATES

SHEETS

1.0 INTRODUCTION

1.1 PURPOSE OF THE STUDY

The report provides information about the severity of flooding from the White River in the Towns of Hancock and Granville, Vermont, and two of its tributaries, Hancock Branch (in Hancock) and Alder Meadow Brook (in Granville). This information is intended for the use of state, local and regional planners in their efforts to provide sound land use and floodplain management.

1.2 AUTHORITY

Authority for U.S. Army Corps of Engineers participation in this effort is sanctioned by Section 206 of the 1960 Flood Control Act (Public Law 86-645) which states:

> "...The Secretary of the Army, through the Chief of Engineers, Department of the Army, is hereby authorized to compile and disseminate information on floods and flood damages, including identification of areas subject to inundation by floods of various magnitudes and frequencies, and general criteria for guidance in the use of floodplain areas and to provide engineering advice to local interests for their use in planning to ameliorate the flood hazard..."

1.3 ACKNOWLEDGMENTS

The study was conducted by the New England Division, Army Corps of Engineers, under the general supervision of Mr. Joseph L. Ignazio, Chief, Planning Division, Mr. Donald W. Martin, Chief, Basin Management Branch, and Mr. Mike Keegan, Chief, Long Range Planning Section. The Project Manager was Mr. Bill Mullen who also performed the HEC-2 computer analysis; Mark Geib prepared the hydrology; and Ms. Debora Wilson reviewed the HEC-2 input and output. Mr. Roy Gaffney with the Department of Environmental Conservation, Agency of Natural Resources, State of Vermont, surveyed elevation reference marks used by the Corps of Engineers surveyors.

2.0 AREA STUDIED

2.1 SCOPE OF STUDY

The area studied (see Figure 1) include 6.2 miles of the White River in the towns of Hancock and Granville, Vermont from the Rochester-Hancock line at the downstream end to a point at the upstream end approximately 2100 feet upstream from the confluence of the White River with Alder Meadow Brook. Also studied was Alder Meadow Brook with the downstream end at the confluence with the White River to the boundary of Granville State Reservation at the upstream end approximately 1.5 miles above the confluence. Also studied was 3.4 miles of Hancock Branch with the downstream end at its confluence with the White River to its confluence with Robbins Branch (upstream end).

2.2 COMMUNITY DESCRIPTION

Hancock and Granville are located in eastern Addison County. Both communities lie in the White River valley. Hancock's central district lies at the confluence of the White River with Hancock Branch, while Granville's central district lies at the White River confluence with Alder

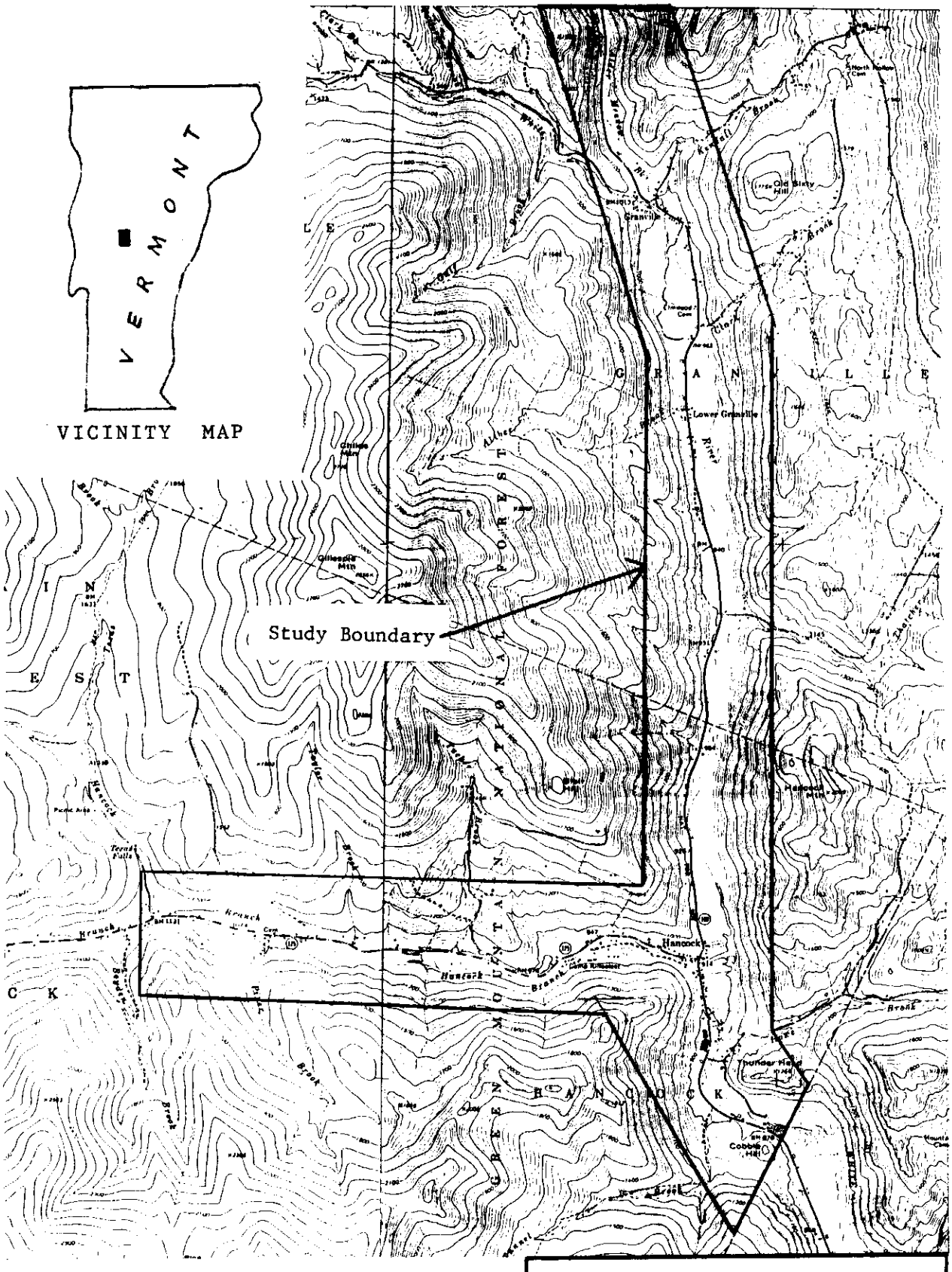


FIGURE 1 - STUDY AREA

WHITE RIVER, HANCOCK BRANCH & ALDER MEADOW BK.
HANCOCK & GRANVILLE

VERMONT

Meadow Brook. The Green Mountain National Forest boundary begins at the western edge of the valley with the forest lying west of this boundary. The White River flows along State Route 100 through Granville, Hancock, and then to Rochester. Hancock Branch flows alongside State Route 125 in Hancock.

2.3 FLOOD HISTORY

The towns of Hancock and Granville, Vermont may experience floods during any time of the year. Spring floods are usually attributed to either snowmelt or snowmelt in conjunction with rainfall; late summer and fall bring the threat of flooding from hurricanes; and late winter and early spring can bring ice jam flooding. Though the White River watershed is susceptible to various types of floods, the most severe flooding results from storms delivering very intense rainfall over a few day's time.

There are no streamflow gages in the vicinity that would indicate the relative severity of historical floods in Hancock or Granville. Significant flooding is known to have occurred on the White River in the Hancock-Granville area in July of 1897, November of 1927 and September of 1938. Figure 2 is from a photograph of the July 1897 flood of the White River in Granville.

3.0 ENGINEERING METHODS

Standard hydrologic and hydraulic study methods were used to determine the flood data presented in this study. Flood events of a magnitude which are expected to be equalled or exceeded once on the average during any 10, 50, 100 or 500 period (recurrence intervals) have been selected as having special significance for flood plain management. These events, commonly termed the 10, 50, 100 and the 500 year floods have a 10, 2, 1 and 0.2 percent chance, respectively, of being equalled or exceeded during any year. Although the recurrence interval represents the long term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The analyses reported here reflect flooding potentials based on conditions existing at the time of completion of this study.

3.1 HYDROLOGIC ANALYSES

Peak discharge frequencies for the White River were calculated by transferring, using drainage area ratio to the 0.7 exponential power, flows of the White River listed in the preliminary Flood Insurance Study for the neighboring town of Rochester. The flows in the Rochester study were derived from flows in an earlier Flood Insurance Study for Stockbridge, Vermont. Peak discharge frequencies were also developed (for comparison purposes only) by statistical analysis of annual peak flow data at the former USGS gaging station, White River at Bethel (01142000), with a drainage area of 241 square miles and 24 years of record (1931 to 1955). A log Pearson type III distribution of annual peak flows was assumed using procedures presented in the Water Resource Council's "Guidelines for Determining Flood Flow Frequency", Bulletin 17B, revised in September 1981. The computed peak discharges agreed closely with the discharges used in the Stockbridge Flood Insurance Study.

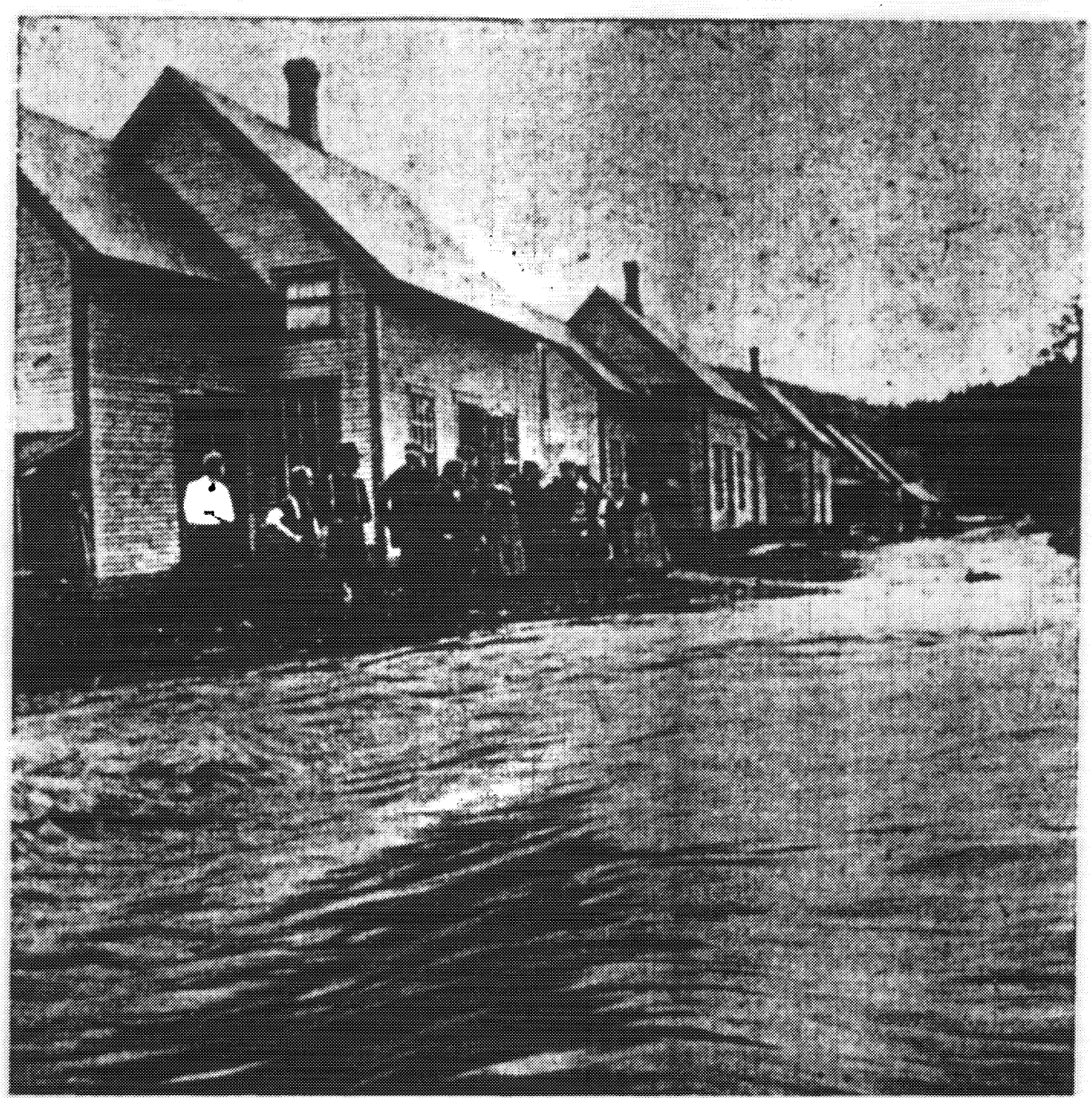


FIGURE 2 - JULY 14, 1897 FLOOD OF THE WHITE RIVER IN GRANVILLE. LOOKING NORTH FROM THE PRESENT-DAY GIFT SHOP.

Peak discharge frequencies for Hancock Branch and Alder Meadow Brook were calculated using drainage area relationships with the White River.

The adopted discharge frequencies are listed in Table 1.

TABLE 1 --- SUMMARY OF DISCHARGES

Flooding Source and Location	Drainage area (sq.mi.)	Peak Discharges 10-year (cfs)	50-year (cfs)	100-year (cfs)	500-year (cfs)
White River					
At Hancock-Rochester Town Line	65.0	7,000	11,500	13,500	20,000
D/S Hancock Branch	56.7	6,400	10,400	12,500	18,300
U/S Hancock Branch	34.9	4,600	7,400	8,900	13,000
D/S Alder Meadow Brook	21.8	3,300	5,300	6,400	9,400
U/S Alder Meadow Brook	11.0	1,700	2,700	3,200	4,700
Hancock Branch					
At Mouth	21.8	2,400	4,000	4,800	7,000
D/S Robbins Branch	17.0	1,900	3,100	3,700	5,500
Alder Meadow Brook					
At Mouth	10.8	1,600	2,600	3,200	4,700
U/S Kendall Brook	6.7	1,100	1,700	2,100	3,100

3.2. HYDRAULIC ANALYSIS

Analysis of the hydraulic characteristics of the streams was carried out to determine the elevations of floods of the selected recurrence intervals. Cross-section information was obtained through field measurements. Field measurements were used to obtain structural geometry at bridges.

Roughness coefficients (Manning's "n") for the streams were estimated by field inspection at each cross section. The roughness coefficients for the White River ranged from 0.035 to 0.045 for the channel and from 0.040 to 0.075 for the overbank areas. For Hancock Brook, they ranged from 0.040 to 0.050 for the channel and from 0.040 to 0.070 for the overbank areas. For Alder Meadow Brook, they ranged from 0.040 to 0.045 for the channel and from 0.045 to 0.075 for the overbank areas.

Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals (See Plates 1 to 6). Water surface elevations at various frequencies of occurrence are listed in Table 2 for each cross-section surveyed. Water surface elevations of floods of the selected recurrence intervals were developed using the U.S. Army Corps of Engineer's HEC-2 water surface profiles computer program (Reference 6). The starting water surface elevations for the White River at various frequencies of occurrence were based on the slope-area method. Starting water surface elevations for Hancock Branch and Alder Meadow Brook were taken as the peak main stem water surface elevations at their confluences with the White River.

TABLE 2 - TABULATION OF CALCULATED WATER SURFACE ELEVATIONS

Stream	Cross Section	Recurrence interval: 10 Years (ft,NGVD)	50 Years (ft,NGVD)	100 Years (ft,NGVD)	500 Years (ft,NGVD)
White River	0.9	870.7	873.3	874.5	876.4
	1	878.0	880.4	881.0	882.2
	50.1 (d/s bridge)	883.4	885.0	886.1	888.3
	50.13 (u/s bridge)	885.8	890.4	891.4	892.3
	2	886.6	890.3	891.2	891.8
	3	897.3	898.3	899.0	901.2
	4	908.8	911.0	911.8	913.4
	5	915.6	917.9	918.6	919.5
	6	924.5	926.5	927.4	929.5
	6.1 (d/s bridge)	926.0	927.8	928.6	930.4
	6.4 (u/s bridge)	930.3	933.7	935.3	936.1
	7	931.2	934.0	935.6	936.4
	7.1 (d/s bridge)	932.6	934.4	935.8	936.7
	7.4 (u/s bridge)	935.8	936.0	936.3	937.2
	8	935.8	936.3	936.8	937.8
	9	950.3	951.5	951.6	952.2
	9.1 (d/s bridge)	957.5	958.5	959.1	960.5
	9.4 (u/s bridge)	960.1	961.1	961.5	962.4
	10	962.4	962.8	963.0	963.9
	11 (White River)	995.4	997.1	998.0	999.0
	12	1021.3	1022.5	1023.0	1024.4
Hancock Br	3.1 (at the mouth)	902.0	904.2	905.0	906.6
	50.6 (d/s bridge)	905.6	908.9	909.3	910.2
	50.63 (u/s bridge)	908.7	913.1	913.3	913.8
	H1	916.3	917.4	917.9	919.2
	H2	947.5	949.1	949.7	951.1
	H3	980.5	981.8	982.3	983.4
	H4	998.2	998.9	999.2	1000.0
	H5	1022.7	1024.5	1025.1	1026.4
	H5.1 (d/s bridge)	1033.5	1034.7	1035.1	1036.2
	H5.4 (u/s bridge)	1036.9	1040.1	1041.4	1043.3
	H6	1062.3	1063.5	1063.9	1064.7
	H7	1114.1	1115.1	1115.8	1117.7
Alder Meadow Brook	10.01 (at the mouth)	978.6	979.0	979.2	979.6
	10.1 (d/s bridge)	990.1	990.8	991.2	991.8
	10.4 (u/s bridge)	991.8	993.6	994.8	995.5
	11 (Alder Meadow Brook)	998.2	998.8	999.2	999.6
	11.1 (d/s bridge)	1003.9	1004.4	1004.6	1005.3
	11.4 (u/s bridge)	1004.7	1005.2	1005.4	1006.0
	15	1006.4	1007.1	1007.5	1008.1
	16	1010.7	1011.4	1011.7	1012.4
	17	1021.4	1021.8	1022.2	1022.8
	17.1 (d/s bridge)	1029.6	1030.6	1031.1	1032.0
	17.4 (u/s bridge)	1034.1	1034.5	1034.7	1035.3
	18	1036.2	1036.8	1037.2	1037.8

All elevations used in this study are referenced to the National Geodetic Vertical Datum of 1929 (NGVD). Descriptions of selected reference marks and their elevations are given in Exhibit 1.

Flood elevations in the communities may be raised by ice jams or debris blockage of the streams in the study area. The hydraulic analysis for this study, however, is based only on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures in general remain unobstructed.

The cross-sections used in the HEC-2 water surface profiles computer run were widely spaced due to monetary constraints and the desire for the entire study area to be analyzed. Due to the relative consistency of cross-section shape, (typical channel shape shown on Plate 7), this did not present a problem. The maps used for delineating the 100 and 500-year floodplain boundaries were the USGS maps (Refs. 3 and 4) with a 20 foot contour interval. The floodplain boundaries along with the stream centerline as shown on the USGS maps are shown superimposed on the State of Vermont's official Base Maps (see Sheets 1 to 3 in inserts at back of this report). In case of any questions regarding flood elevations, the flood profiles (Plates 1 to 6) should be consulted.

4.0 FLOOD PLAIN MANAGEMENT

4.1 FLOOD BOUNDARIES

The 100-year flood has been used in this study as the base flood for purposes of flood plain management measures. The 500-year flood is used to indicate additional areas of flood risk in the community. The boundaries of the 100 and 500-year floods have been delineated using the flood elevations determined at each cross section. Between cross sections, the flood boundaries were interpolated using USGS topographic maps (References 3 & 4) with a contour interval of twenty feet. In cases where the 100 and the 500 year flood boundaries are either close together or co-linear, only the 100 year boundary has been shown. Small areas within the flood boundaries (i.e. islands) may lie above the flood elevations, and therefore would not be the subject to flooding. Due to limitations of the map scale, such areas are not shown.

4.2 FLOODWAYS

Encroachment on flood plains, such as artificial fill, reduces the flood-carrying capacity, increases the flood heights of streams, and increases flood hazards in areas beyond the encroachment itself. One aspect of flood plain management involves balancing the economic gain from flood plain development against the resulting increase in flood hazard. The concept of a floodway is used as a tool to assist local communities in this aspect of flood management. Under this concept, the area of the 100 year flood is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent flood plain areas that must be kept free of encroachment in order that the 100 year flood may be carried without substantial increase in flood heights. Minimum standards limit such increases in flood heights to 1.0 foot, provided that hazardous velocities are not produced. Floodways were not derived as part of this report.

5.0 BIBLIOGRAPHY

1. State of Vermont, Department of Water Resources and Environmental Conservation, Field Survey of Reference Marks, 1988.

2. U.S. Department of Housing and Urban Development, Federal Emergency Management Agency, Flood Insurance Study, Town of Rochester, Vermont, December 31, 1987 (preliminary).

3. U.S. Geological Survey, 7.5' topographic map, scale 1:24000, Bread Loaf, Vermont 1970.

4. U.S. Geological Survey, 7.5' topographic map, ,scale 1:24000, Hancock, Vermont, 1970.

5. U.S. Army Corps of Engineers, Field Surveys, May and July of 1988.

6. U.S. Army Corps of Engineers, Water Surface Profiles, Computer Program HEC-2.

7. U. S. Army Corps of Engineers, Water Surface Profiles Computer Run of 10 April 1989 for Hancock and Granville, Vt.

8. Vermont's Property Valuation and Review Division, Agency of Administration, Vermont Base Map (aerial photos), scale 1:5000, sheet nos. 120156, 124156,124160, and 124164, year: 1979.

9. photograph from Mrs. Parrish of Granville, Vermont, July 14, 1897.

EXHIBIT 1 - SELECTED REFERENCE MARKS
ALONG THE WHITE RIVER AND IN THE HANCOCK BRANCH
TOWNS OF HANCOCK AND GRANVILLE, VERMONT

RM-2 A chisel square on top of upstream southerly end of headwall of multi-plate under Rte. 100 on west side of highway - elevation 887.70

RM-3 A chisel square on top of the southwest wingwall of Churchville Road Bridge over the White River opposite the Weyerhauser Company buildings - elevation 889.35

RM-6 A State of Vermont Survey Tablet (unstamped) located on top of the southeast wingwall of the Rte. 100 Bridge over the Hancock Branch in the Village of Hancock - elevation 912.02

RM-8 A chiseled square on white boulder located 0.6 mi. N of; 23 ft. W of; and 3 ft. higher than centerline of Rte. 100; 15 ft. SW of W end of galvanized pipe culvert - elevation 925.69

RM-10 A chiseled square on top of the downstream northerly wingwall of a 6' x 6' concrete box culvert under Rte. 100. Small unnamed brook near White Farm House - elevation 952.68

RM-13 State of Vermont Survey Tablet stamped "17 AIM 1963 Reset 1982" set in a small low-lying rock outcrop at Newton's Christmas Tree Lodge, about 300 ft. S of the White River, 20 ft. east of the NE corner of main house, 43 ft. NE of the corresponding SE corner of the house, 6 Ft. ENE of an 8-inch spruce tree - elevation 950.12

RM-14 A State of Vermont Survey Tablet set in the downstream S end of the Rte. 100 bridge over the White River - elevation 939.68

RM-15 A standard U.S.G.S. tablet stamped "10 WHC 1964 940" set in SW concrete abutment of the Rte. 100 bridge over the White River - elevation 939.93 (NOTE: 939.93 does not agree with the U.S.G.S. elevation of 940.165 painted on the bridge.)

RM-17 A chiseled square set in the southerly end of the concrete base for the gas pump island at the Granville Country Store - elevation 943.76

RM-18 A chiseled square set on top of S upstream wingwall of Rte. 100 bridge over Allbee Brook - elevation 964.59

RM-19 A chiseled square set on the top of curb at the upstream N. end of a Rte. 100 concrete dry bridge near Rod's Car Care - elevation 957.84

RM-20 A chiseled square set on the top of the upstream N wingwall of the Rte. 100 bridge over the White River at the confluence with Clark Brook - elevation 962.23

RM-22 A chiseled square set on edge of sidewalk to entrance of Town Clerk's Office. Square located on S side of sidewalk 1.5 feet from building - elevation 970.56

RM-23 A chiseled square set on top of the foundation at the Granville Fire Station. Chiseled square located in most S corner of S bay door where trucks enter building - elevation 983.59

RM-24 A chiseled square set in the top of the wingwall on the downstream southerly end of the Rte. 100 bridge over Kendall Brook - elevation 995.47

RM-26 A State of Vermont Survey Tablet (unstamped) set on downstream SE wingwall of bridge over the White River to Bowl Mill in the Village of Granville - elevation 1012.76

RM-28 A chiseled square in ledge on W side of Rte. 100 directly opposite of a private bridge over the brook to 2 houses. Chisel square in top of ledge about 6-feet from edge of pavement and 4-feet in height above ditch grade - elevation 1011.41

RM-29 A U.S. Forest Service Boundary Tablet stamped 21-502 D 1935-906 set in a concrete post. Concrete post is near marker post sign "U.S. Forest Service Land Survey Monument" - elevation 1015.43

RM-30 A U.S. Forest Service Boundary Tablet stamped 909-1935 set in a concrete post - elevation 1025.27

RM-32 A chiseled square on the downstream S wingwall of the Rte. 100 bridge over Alder Meadow Brook near the entrance to the Granville State Reservation - elevation 1031.24

RMH-3 A chisel square on the north end of a 36-inch concrete culvert under Rte. 125 0.6 miles W of Hancock - elevation 937.17

RMH-6 A U.S.G.S. standard tablet set in rock 1.1 miles west of Hancock; 18 ft. NE of center line of Rte. 125 in ditch line; tablet stamped "10 AIM 1963 978" - elevation 978.278

RMH-7 A chiseled square on top of the downstream easterly wingwall of the Rte. 125 bridge over Tucker Brook. Bridge No. ST-187 L 1941 - elevation 996.76

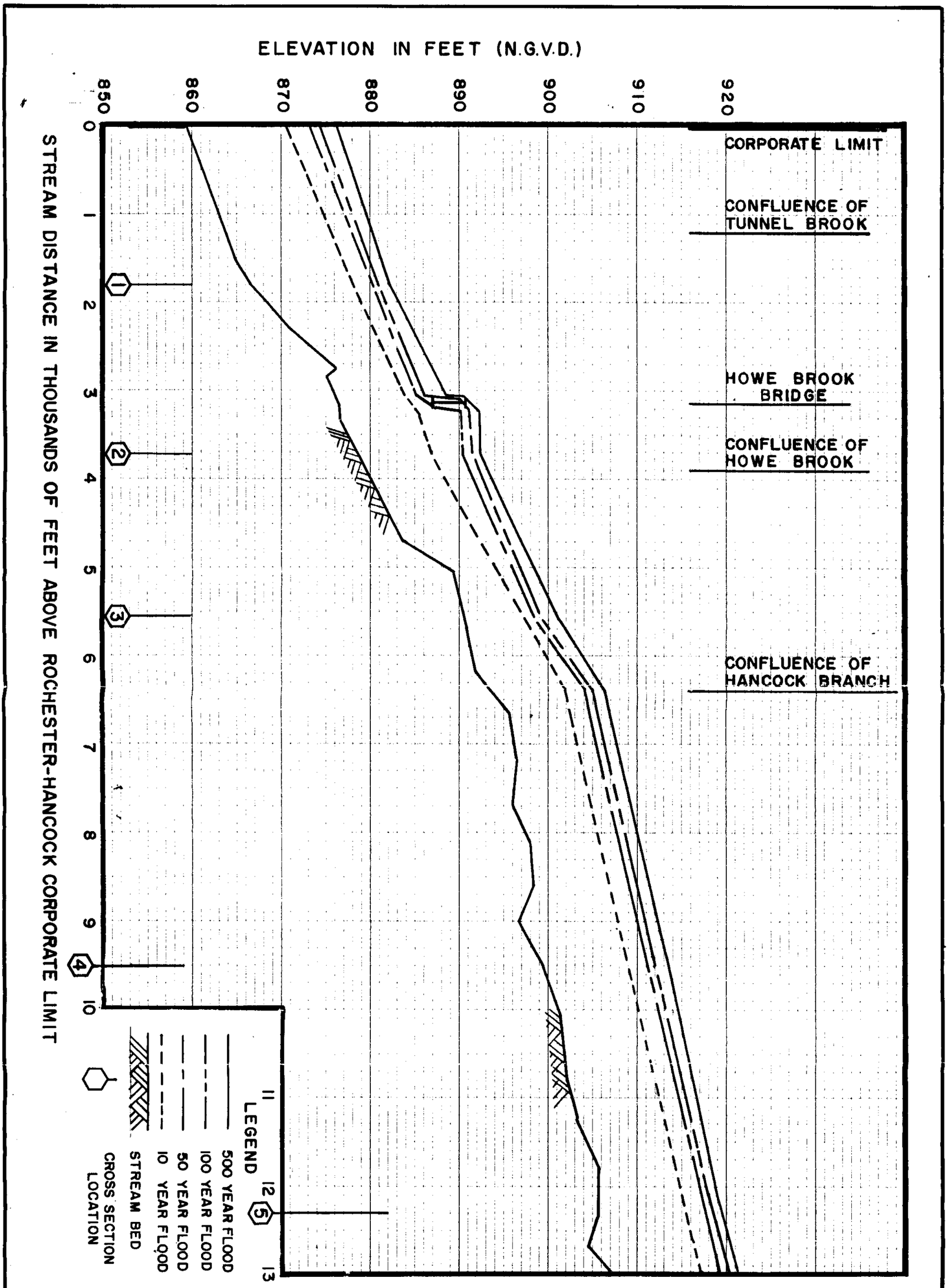
RMH-11 A chiseled square on top of the upstream westerly wingwall of the Rte. 125 bridge over the West Branch near Fassett Road - elevation 1043.28

RMH-12 A chiseled square on headwall of 4' x 8' concrete box culvert under Rte. 125 at Piper Brook. Square located @ easterly end of the headwall on the upstream side of Rte. 125 - elevation 1072.86

RMH-13 A chiseled square on boulder 2.7 miles west of Hancock, 65 feet N. of centerline of Rte. 125, approximately 200 feet easterly of two mobile homes - elevation 1079.26

RMH-14 NIPP 59/61 near white mobile home - elevation 1111.55

RMH-15 A U.S.G.S. standard tablet stamped "11 AIM 1963 1131" set on top of curb at upstream southerly end of Texas Falls Road Bridge over the Hancock Branch - elevation 1131.285



U.S. ARMY, CORPS OF ENGINEERS

HANCOCK, VERMONT

FLOOD PROFILES

WHITE RIVER

PLATE 1

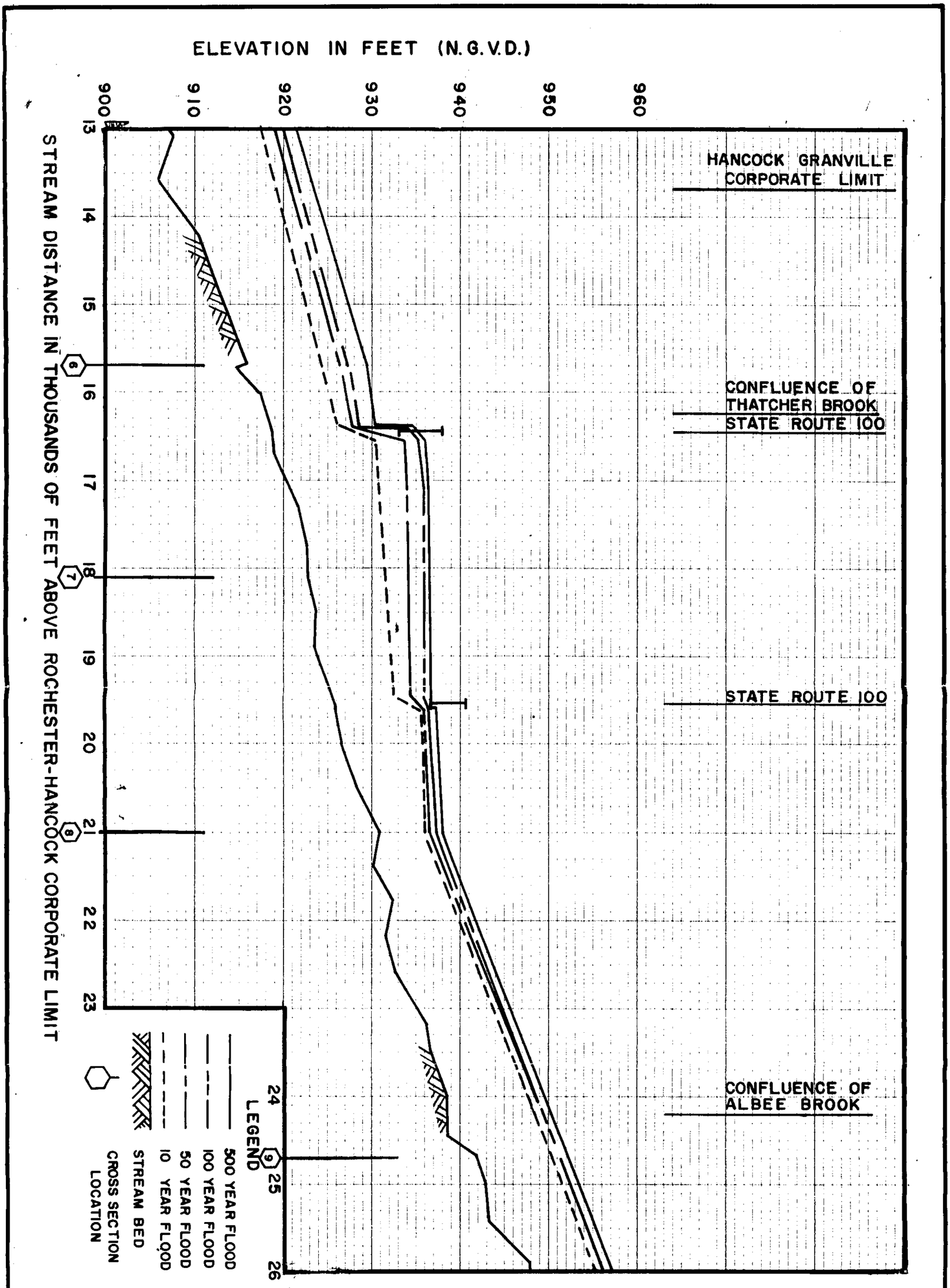
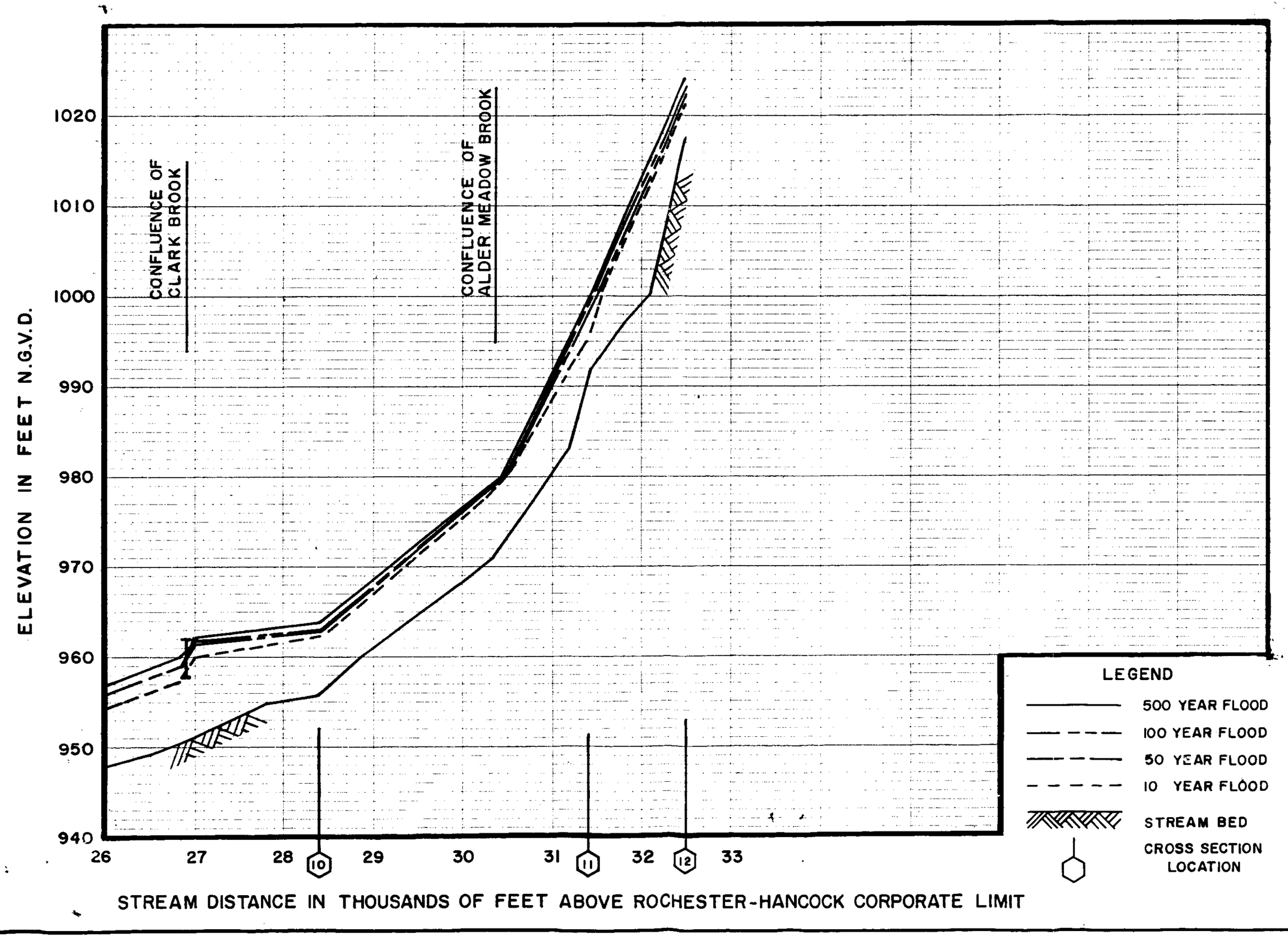


PLATE 2 12	U.S. ARMY, CORPS OF ENGINEERS HANCOCK AND GRANVILLE, VT.	FLOOD PROFILES WHITE RIVER



FLOOD PROFILES

WHITE RIVER

U.S. ARMY, CORPS OF ENGINEERS

GRANVILLE, VERMONT

PLATE 3

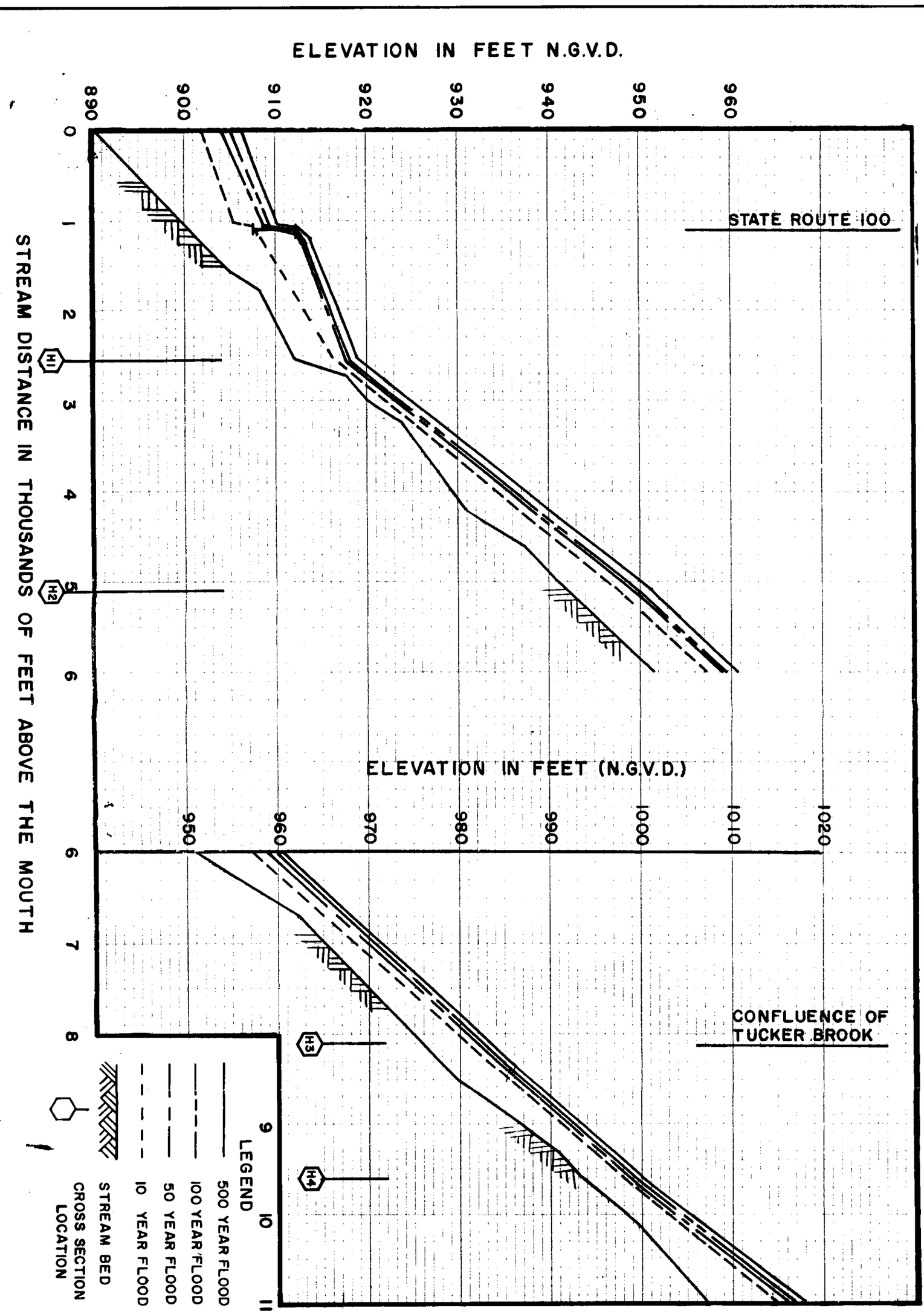


PLATE 4	U.S. ARMY, CORPS OF ENGINEERS	FLOOD PROFILES
	HANCOCK, VERMONT	HANCOCK BRANCH

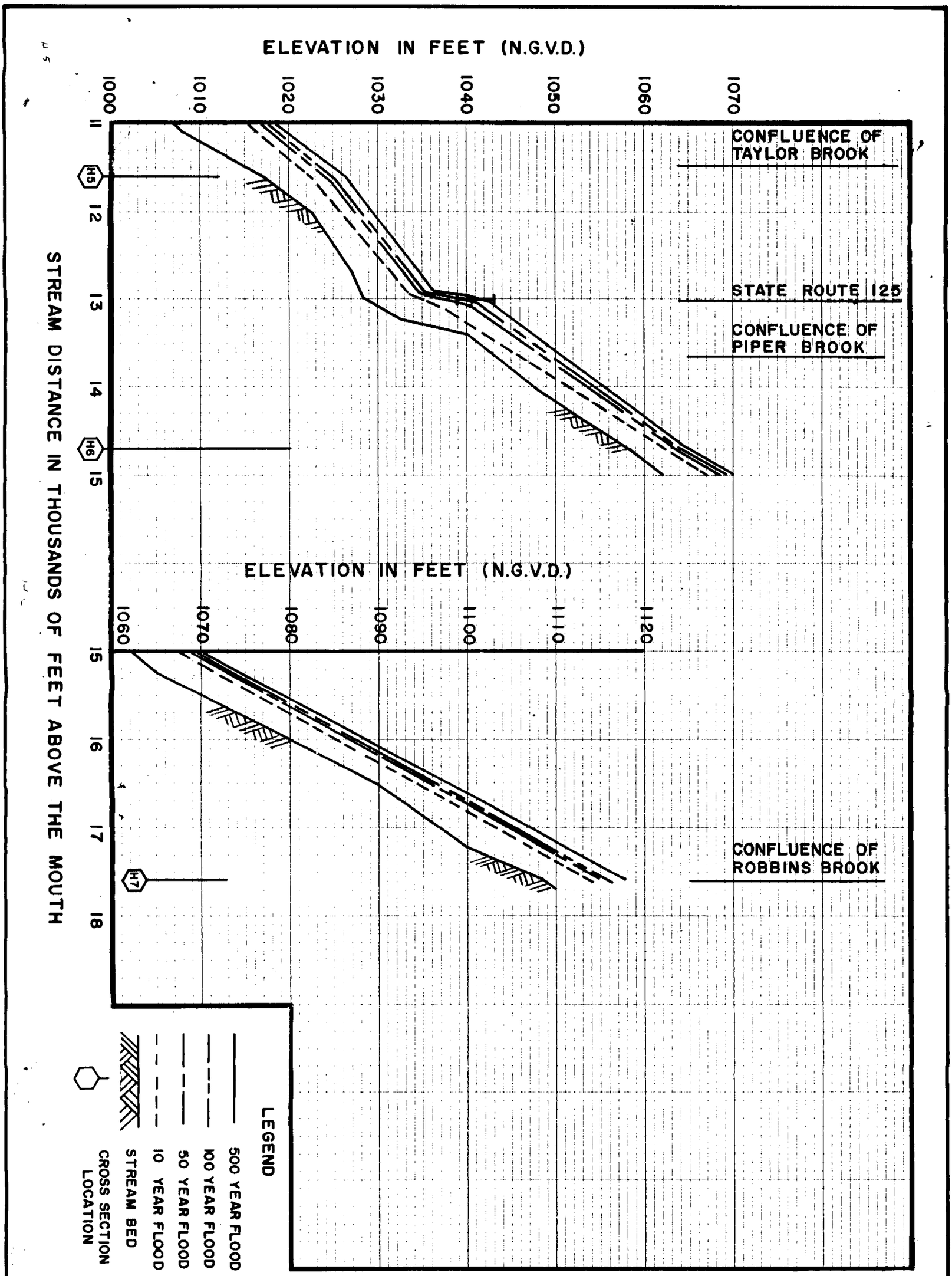
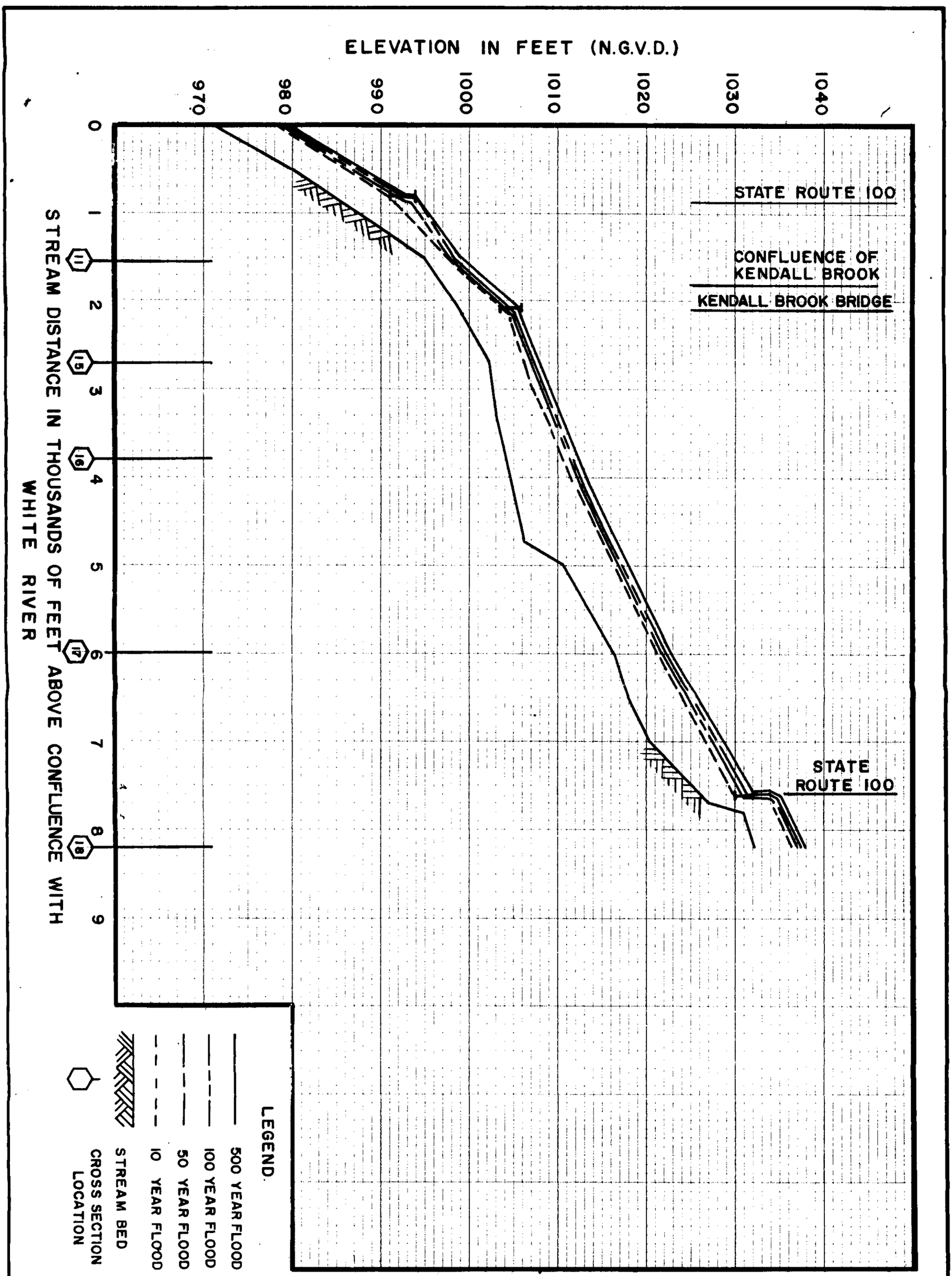


PLATE 5	U.S. ARMY, CORPS OF ENGINEERS HANCOCK, VERMONT	FLOOD PROFILES HANCOCK BRANCH



U.S. ARMY, CORPS OF ENGINEERS

GRANVILLE, VERMONT

FLOOD PROFILES

ALDER MEADOW BROOK

PLATE 6

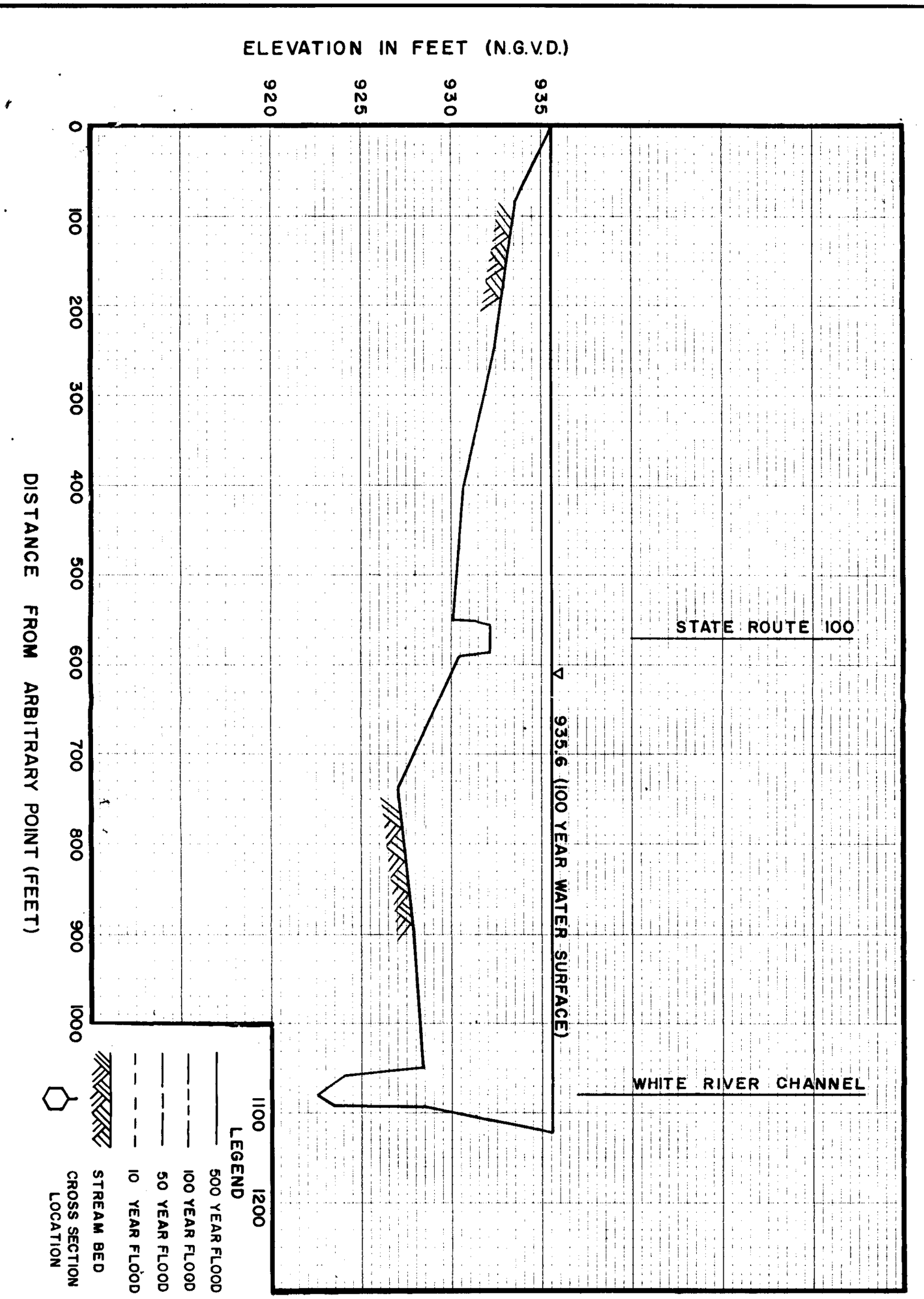


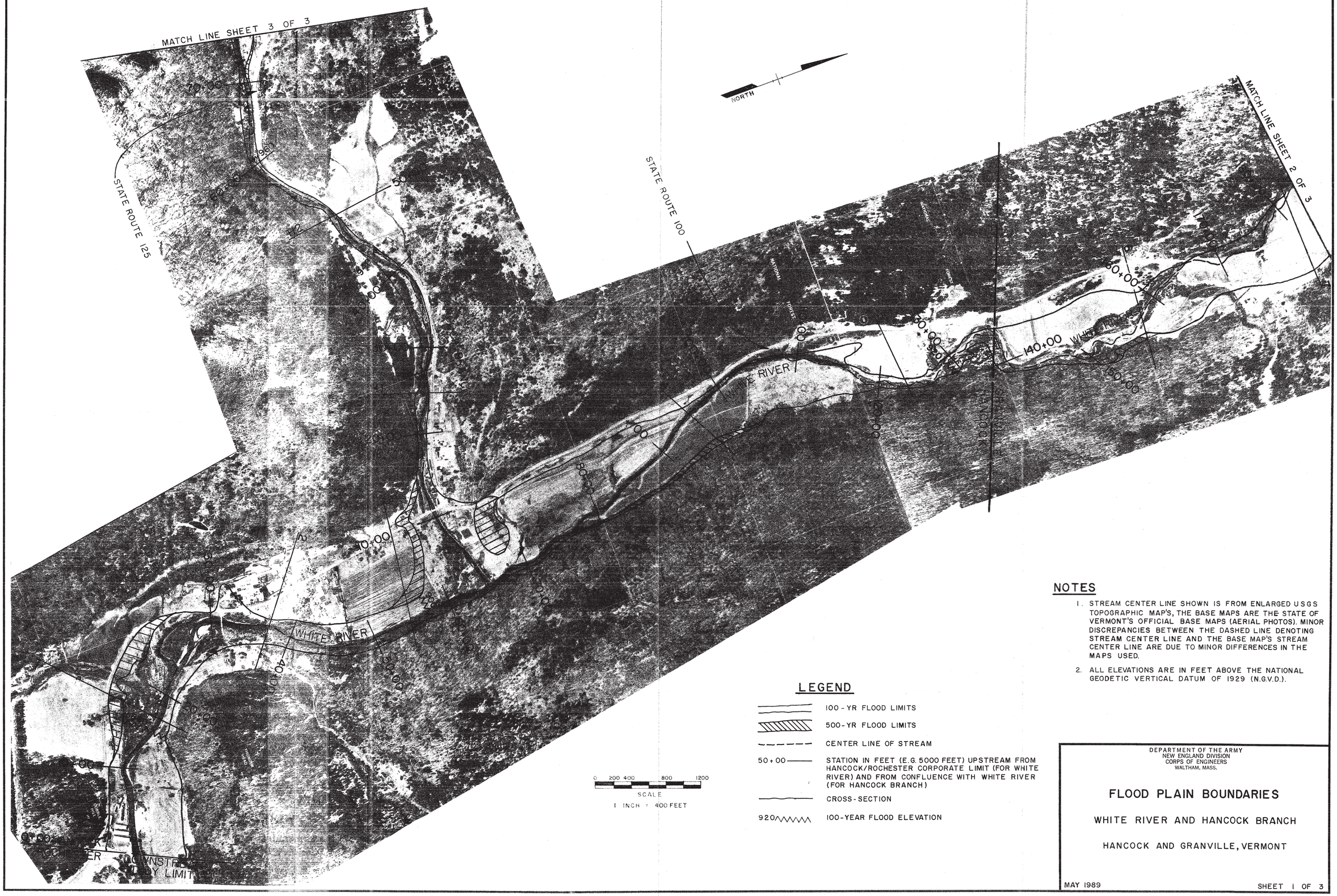
PLATE 7

U.S. ARMY, CORPS OF ENGINEERS

GRANVILLE, VERMONT

FLOOD PROFILES

TYPICAL CROSS SECTION WHITE R.
(CROSS SECTION 7, STA. 181 + 00)



0 200 400 800 1200
SCALE
1 INCH = 400 FEET

LEGEND

- 100-YR FLOOD LIMITS
- 500-YR FLOOD LIMITS
- CENTER LINE OF STREAM
- 50+00 — STATION IN FEET (E.G. 5000 FEET) UPSTREAM FROM HANCOCK/ROCHESTER CORPORATE LIMIT (FOR WHITE RIVER) AND FROM CONFLUENCE WITH WHITE RIVER (FOR HANCOCK BRANCH)
- CROSS-SECTION
- 920 — 100-YEAR FLOOD ELEVATION

NOTES

1. STREAM CENTER LINE SHOWN IS FROM ENLARGED USGS TOPOGRAPHIC MAP'S, THE BASE MAPS ARE THE STATE OF VERMONT'S OFFICIAL BASE MAPS (AERIAL PHOTOS). MINOR DISCREPANCIES BETWEEN THE DASHED LINE DENOTING STREAM CENTER LINE AND THE BASE MAP'S STREAM CENTER LINE ARE DUE TO MINOR DIFFERENCES IN THE MAPS USED.
2. ALL ELEVATIONS ARE IN FEET ABOVE THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (N.G.V.D.).

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION
CORPS OF ENGINEERS
WALTHAM, MASS.

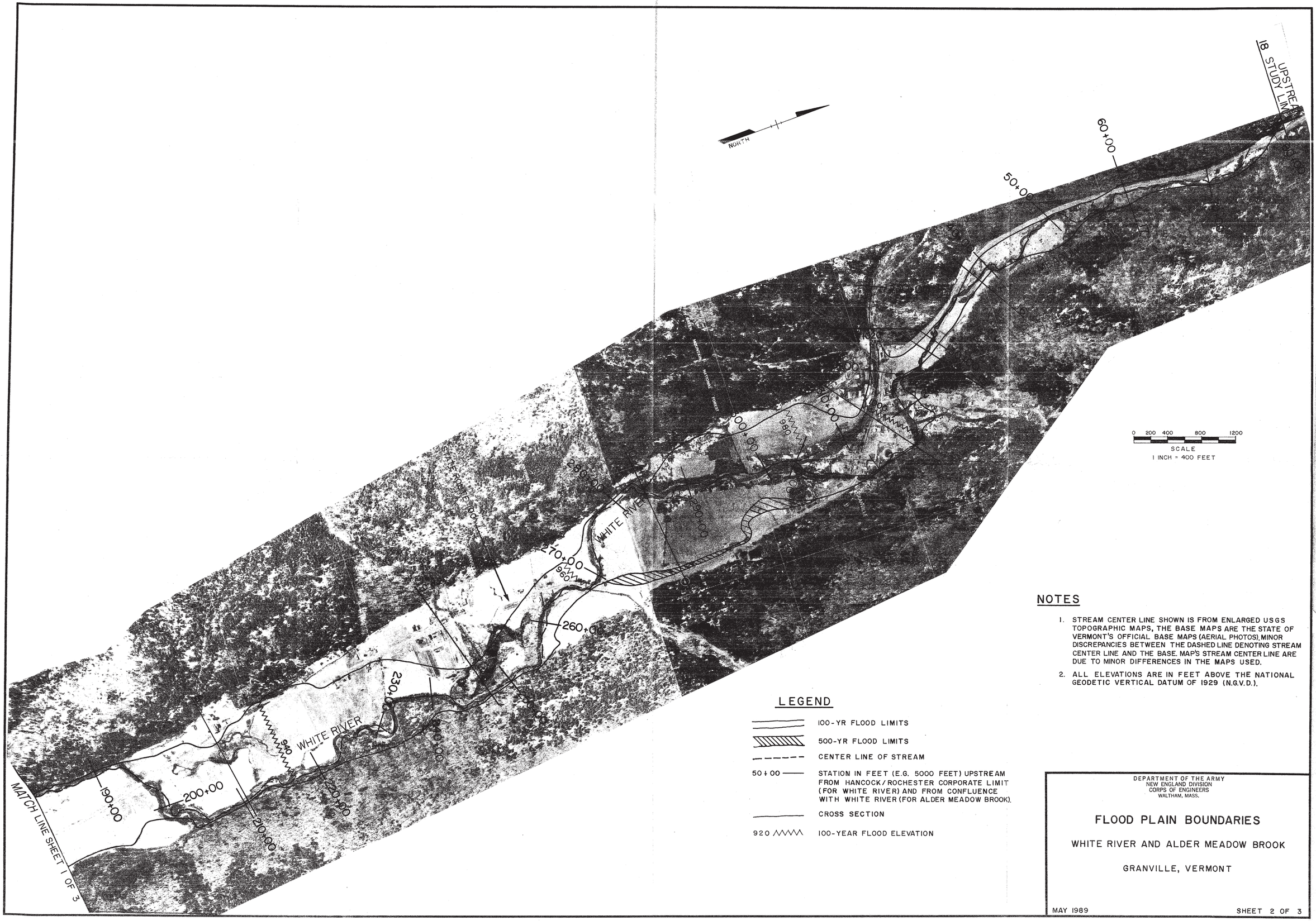
FLOOD PLAIN BOUNDARIES

WHITE RIVER AND HANCOCK BRANCH

HANCOCK AND GRANVILLE, VERMONT

MAY 1989

SHEET 1 OF 3



LEGEND

- 100-YR FLOOD LIMITS
- 500-YR FLOOD LIMITS
- CENTER LINE OF STREAM
- 50+00 — STATION IN FEET (E.G. 5000 FEET) UPSTREAM FROM HANCOCK/ROCHESTER CORPORATE LIMIT (FOR WHITE RIVER) AND FROM CONFLUENCE WITH WHITE RIVER (FOR ALDER MEADOW BROOK).
- CROSS SECTION
- 920 — 100-YEAR FLOOD ELEVATION

NOTES

1. STREAM CENTER LINE SHOWN IS FROM ENLARGED USGS TOPOGRAPHIC MAPS, THE BASE MAPS ARE THE STATE OF VERMONT'S OFFICIAL BASE MAPS (AERIAL PHOTOS). MINOR DISCREPANCIES BETWEEN THE DASHED LINE DENOTING STREAM CENTER LINE AND THE BASE MAP'S STREAM CENTER LINE ARE DUE TO MINOR DIFFERENCES IN THE MAPS USED.
2. ALL ELEVATIONS ARE IN FEET ABOVE THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (N.G.V.D.).

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION
CORPS OF ENGINEERS
WALTHAM, MASS.

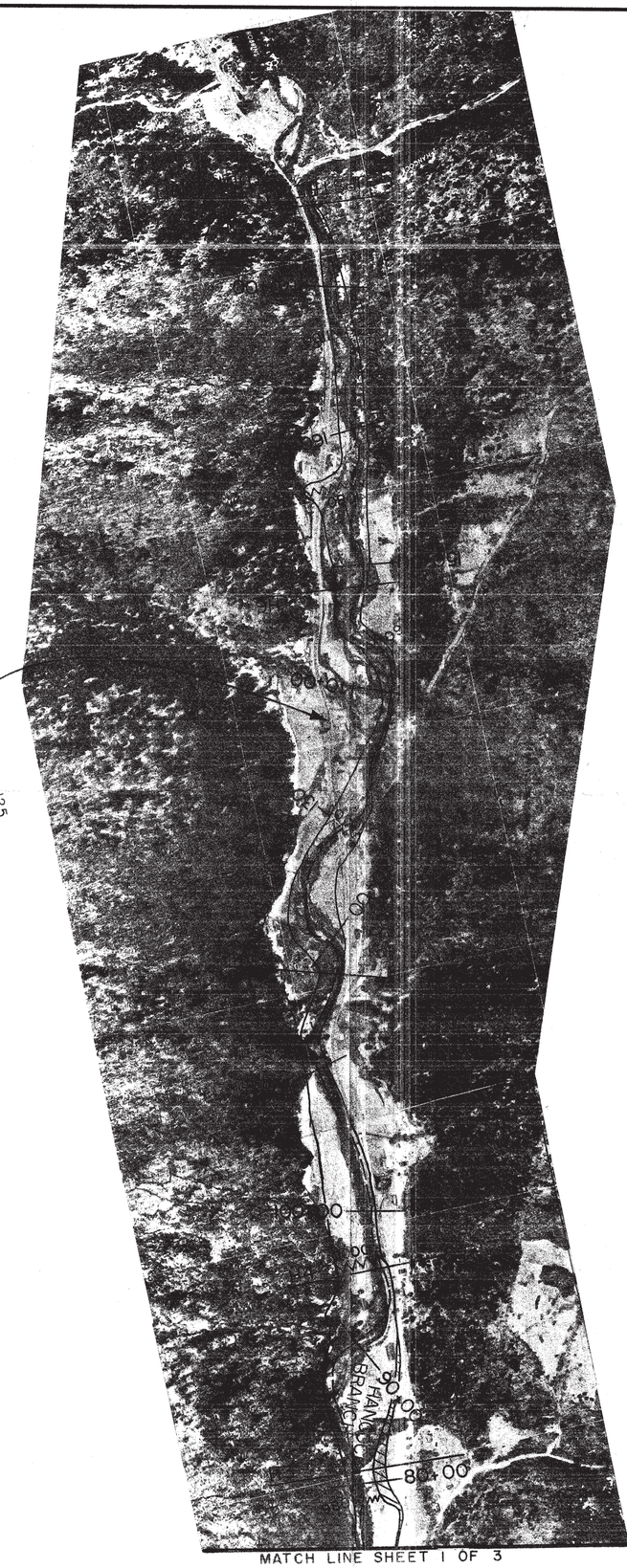
FLOOD PLAIN BOUNDARIES

WHITE RIVER AND ALDER MEADOW BROOK

GRANVILLE, VERMONT

MAY 1989

SHEET 2 OF 3



NORTH

0 200 400 800 1200

SCALE
1 INCH = 400 FEET

LEGEND

- 100-YR FLOOD LIMITS
- 500-YR FLOOD LIMITS
- CENTER LINE OF STREAM
- 50+00 — STATION IN FEET (E.G. 5000 FEET) UPSTREAM FROM CONFLUENCE WITH WHITE RIVER
- CROSS-SECTION
- 920 — 100-YEAR FLOOD ELEVATION

NOTES

1. STREAM CENTER LINE SHOWN IS FROM ENLARGED U S G S TOPOGRAPHIC MAPS, THE BASE MAPS ARE THE STATE OF VERMONT'S OFFICIAL BASE MAPS (AERIAL PHOTOS). MINOR DISCREPANCIES BETWEEN THE DASHED LINE DENOTING STREAM CENTER LINE AND THE BASE. MAP'S STREAM CENTER LINE ARE DUE TO MINOR DIFFERENCES IN THE MAPS USED.
2. ALL ELEVATIONS ARE IN FEET ABOVE THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (N.G.V.D.).

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION
CORPS OF ENGINEERS
WALTHAM, MASS.

FLOOD PLAIN BOUNDARIES

HANCOCK BRANCH

HANCOCK, VERMONT

MAY 1989

SHEET 3 OF 3